CLAIMS

1.   A method comprising:

determining that a desired end state for an autonomic computing system can

5   be reached using conditional relationship specifications; and

placing the autonomic computing system in the desired end state.

2.   A method comprising:

determining that a desired end state for an autonomic computing system

cannot be reached;

determining that an acceptable sub-state can be reached using at least one

5   of priority ratings, conditional relationship specifications, and alternative relationship

specifications; and

placing the autonomic computing system in an acceptable state.

3.   The method of claim 2, wherein the priority ratings comprise an attribute

10   assigned to a policy definition that determines at least one of a selection of

conflicting policy definitions and a sequence for applying the policy definitions.

4.   The method of claim 3, wherein the attribute assigned to the policy definition

is one of the following: mandatory, a numerical value, and not required.

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5.   The method of claim 2, wherein the conditional relationship specifications

comprise policy definitions that are applied when the state of a specified resource

meets a predetermined requirement.

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6. The method of claim 2, wherein the alternative relationship specifications comprise at least one of policy definitions, and conditional relationship specifications, that are applied when the state of a specified resource does not meet a predetermined requirement.

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7.   A computer readable medium comprising computer instructions for

performing the following:

determining that a desired end state for an autonomic computing system can

be reached using conditional relationship specifications; and

5   placing the autonomic computing system in the desired end state.

8.   A computer readable medium comprising computer instructions for

performing the following:

determining that a desired end state for an autonomic computing system

cannot be reached;

5   determining that an acceptable sub-state can be reached using at least one

of priority ratings, conditional relationship specifications, and alternative relationship

specifications; and

placing the computing system in an acceptable sub-state.

10   9.   The computer readable medium of claim 8, wherein the priority ratings

comprise an attribute assigned to a policy definition that determines a sequence for

applying the policy definition.

10.   The computer readable medium of claim 9, wherein the attribute assigned to

15   the policy definition is one of the following: mandatory, a numerical value, and not

required.

11.   The computer readable medium of claim 8, wherein the conditional

relationship specifications comprise policy definitions that are applied when the state

20   of a specified resource meets a predetermined requirement.

12.   The computer readable medium of claim 8, wherein the alternative

relationship specifications comprise at least one of policy definitions and conditional

relationship specifications that are applied when the state of a specified resource does

not meet a predetermined requirement.

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13.   An autonomic resource manager for an autonomic computing system, the
autonomic resource manager comprising:

memory for storing at least one policy definition;

a resource monitor, communicatively coupled with each resource in the

5   autonomic computing system, for monitoring, and communicating data with, each
resource in the autonomic computing system;

an equivalency definer, communicatively coupled with each resource in the
autonomic computing system, and with the memory, for defining at least one
equivalency representing at least one set of equivalent resources in the autonomic

10   computing system, and storing the at least one equivalency in the memory;

a policy generator, communicatively coupled with the resource monitor and
the memory, for providing in the memory a representation of a system-wide graph of
available actions and at least one of: priority ratings, conditional relationship
specifications, and alternative relationship specifications, corresponding with

15   resources in the autonomic computing system; and

an automation engine, communicatively coupled with the resource monitor,
with at least one resource in the autonomic computing system, and with the
memory, for providing available actions to the at least one resource in the in the
autonomic computing system in order for the autonomic computing system to

20   establish and maintain a desired end state.

14.   The autonomic resource manager of claim 13, further comprising:

a resource harvester, communicatively coupled with each resource in an

autonomic computing system, with the resource monitor, with the equivalency

definer, with the policy generator, and with the memory, for specifying underlying

5   relationships between resources in the autonomic computing system via self

discovery;

15.   The autonomic resource manager of claim 13, wherein the priority ratings

comprise an attribute assigned to a policy definition that determines a sequence for

10   applying the policy definition.

16.   The autonomic resource manager of claim 13, wherein the conditional

relationship specifications comprise policy definitions that are applied if the state of a

specified resource meets a predetermined requirement.

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17.   The autonomic resource manager of claim 13, the alternative relationship

specifications comprise at least one of policy definitions and conditional relationship

specifications that are applied when the complete desired end state of the system

cannot be met.

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18.   An autonomic computing system, comprising:

distributed resources; and

an autonomic resource manager, communicatively coupled with the

distributed resources, for determining that a desired end state for the autonomic

5   computing system cannot be reached, determining that an acceptable sub-state can

be reached using at least one of priority ratings, conditional relationship

specifications, and alternative relationship specifications, and placing the autonomic

computing system in an acceptable sub-state.

10   19.   The autonomic computing system of claim 18, wherein the priority ratings

comprise an attribute assigned to a policy definition that determines a sequence for

applying the policy definition to the operation of the distributed resources.

20.   The autonomic computing system of claim 18, wherein the conditional

15   relationship specifications comprise policy definitions that are applied if the state of a

specified resource meets a predetermined requirement.

21.   The autonomic computing system of claim 18, wherein the alternative

relationship specifications comprise at least one of policy definitions and conditional

20   relationship specifications that are applied when the complete desired end state of the

system cannot be met.